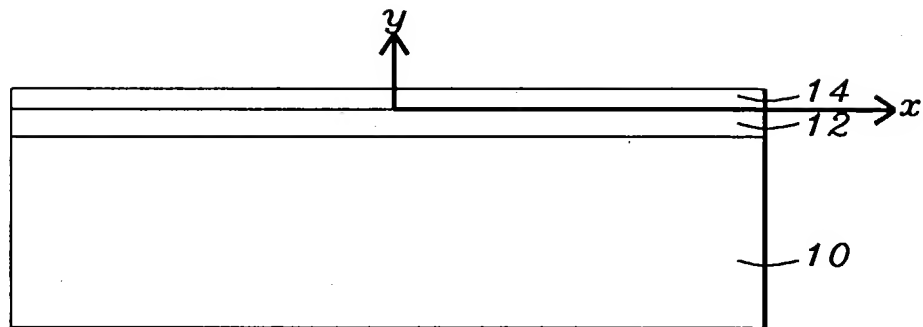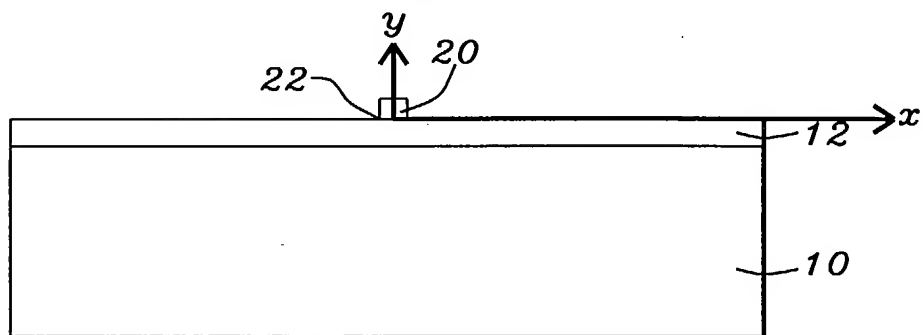Stress Modeling

Underclad 12 and core layers 14
on substrate 10

FIG. 1

Stress Modeling

Waveguide 20 etched in
core layer 14

FIG. 2

Sress Modeling
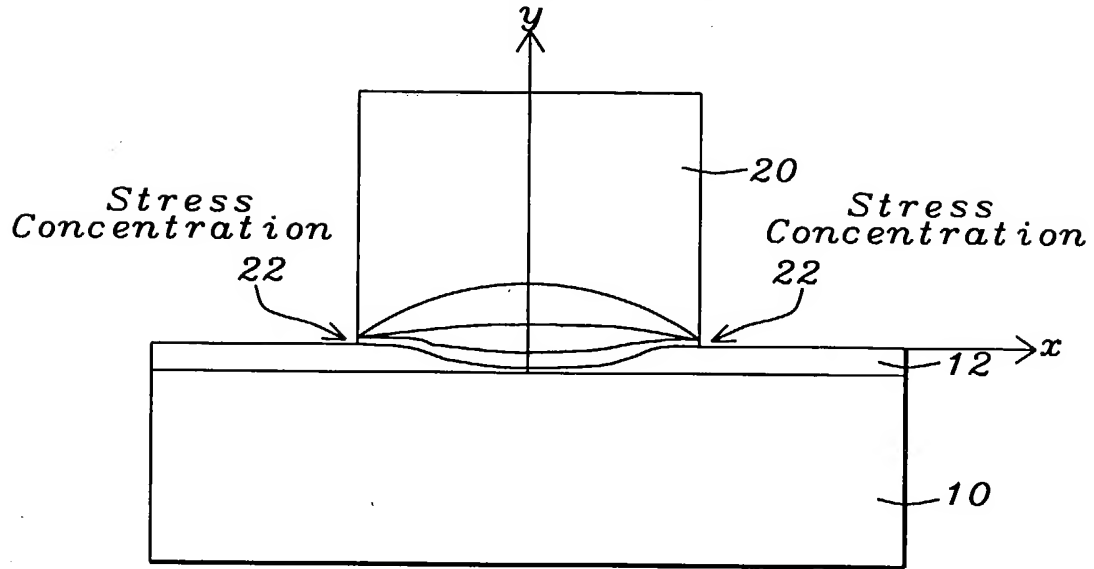

Stress contours for δxx
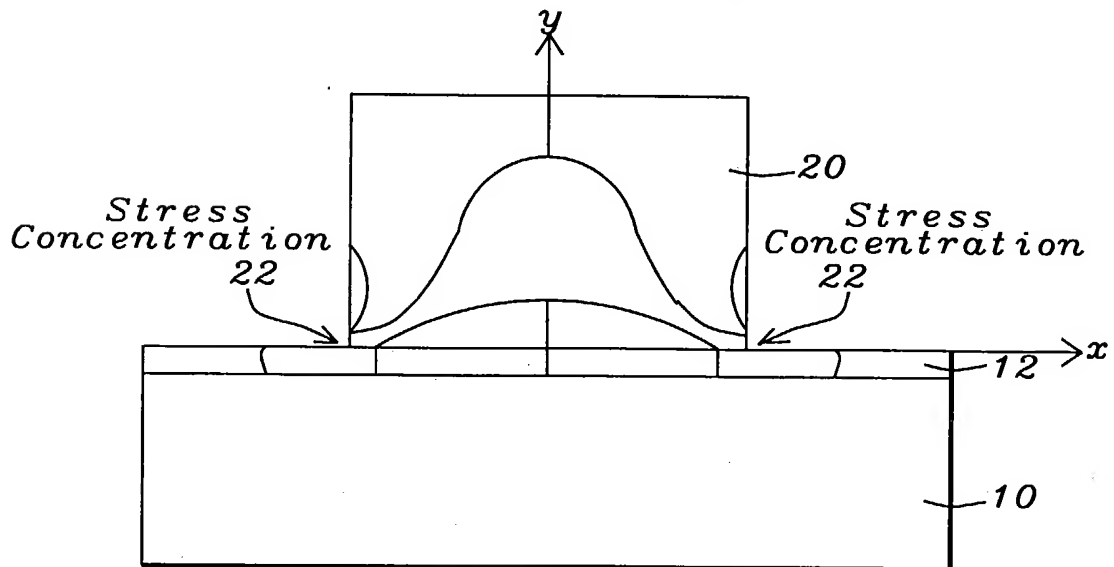(negative is compressive and
positive is tensile)

FIG. 3

Sress Modeling

Stress contours for δyy
(negative is compressive and
positive is tensile)

FIG. 4

Sresses δ_{xx} & δ_{yy} in the Waveguide 20

Distance from top of Waveguide ($m\mu$)
Sresses δ_{xx}, δ_{yy} and $(\delta_{xx} - \delta_{yy})$
in the waveguide 20 at X=0

FIG. 5

Sresses δ_{xx} & δ_{yy} in the Waveguide 20

Distance from top of Waveguide 20 ($m\mu$)
Sresses δ_{xx}, δ_{yy} and $(\delta_{xx} - \delta_{yy})$
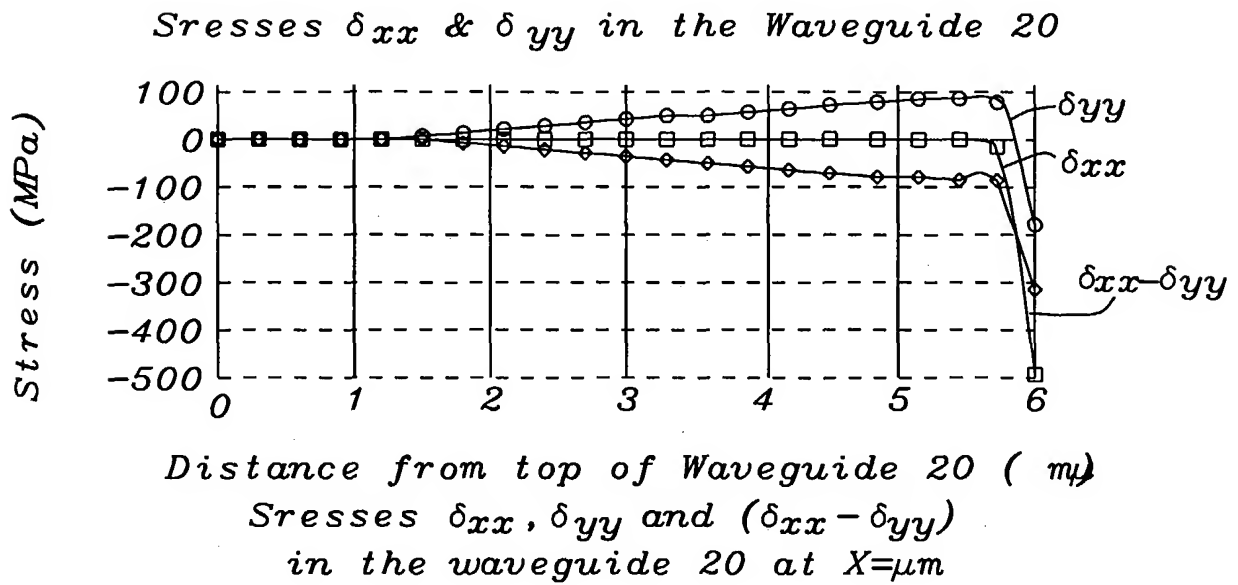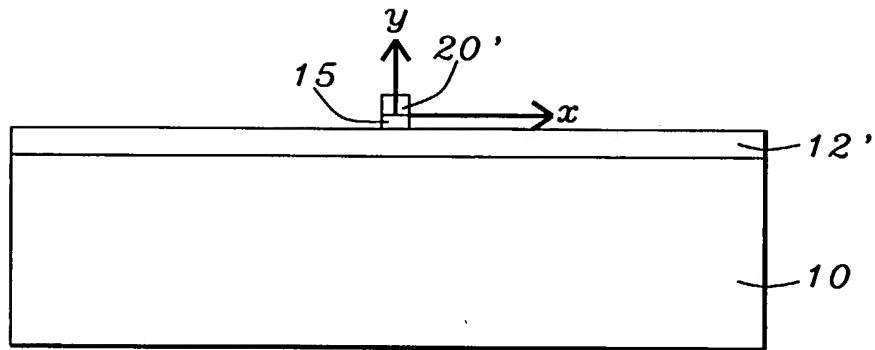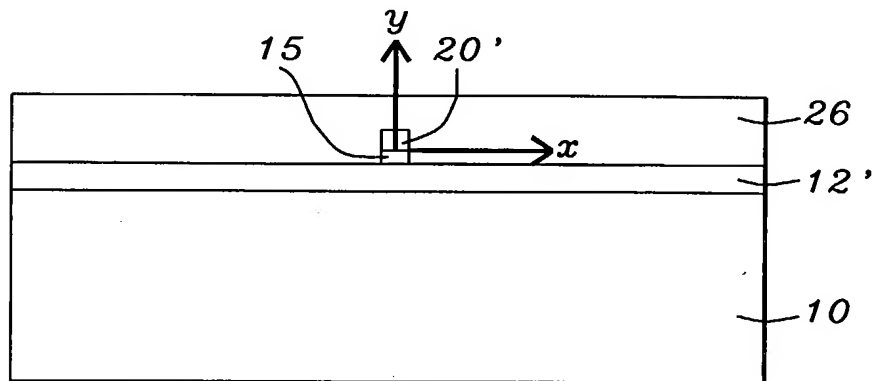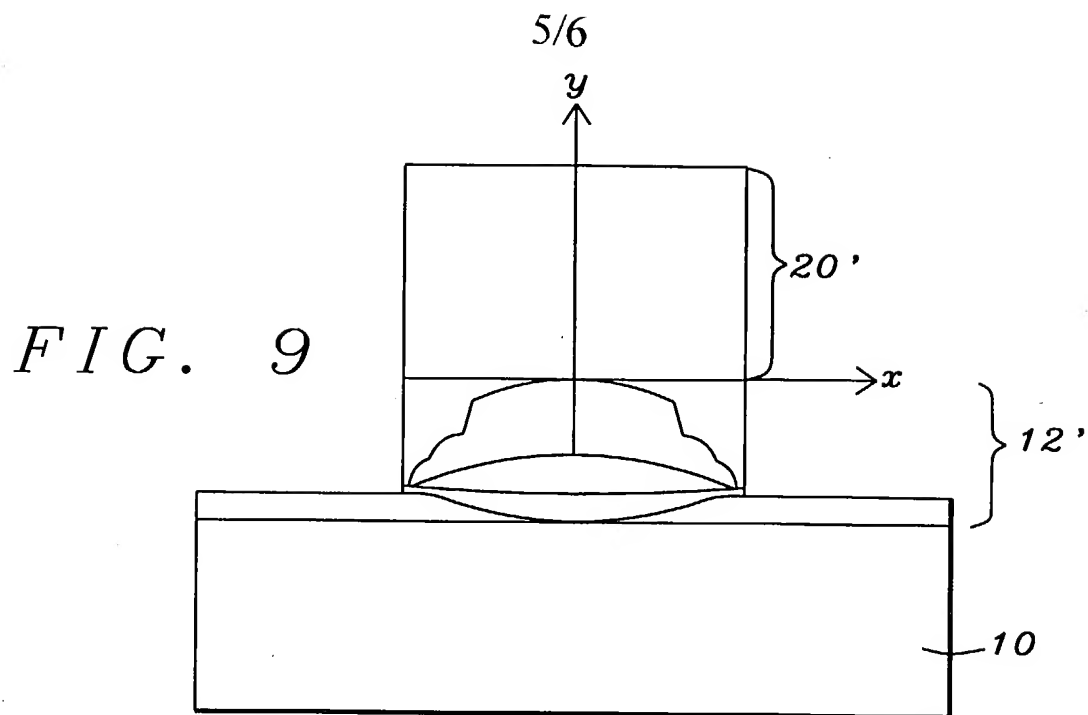in the waveguide 20 at X=μm
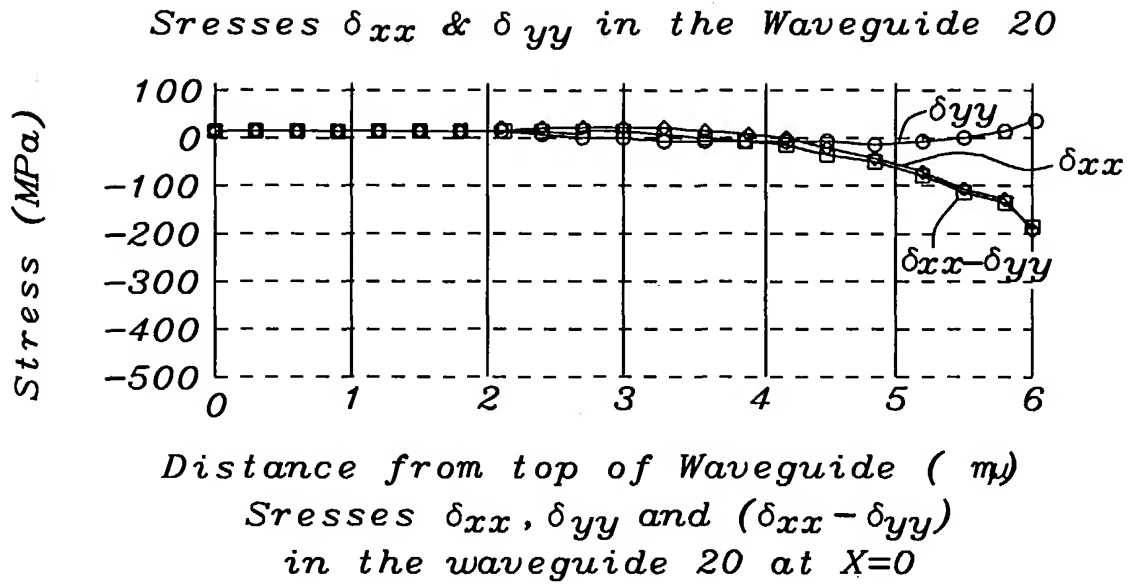
FIG. 6

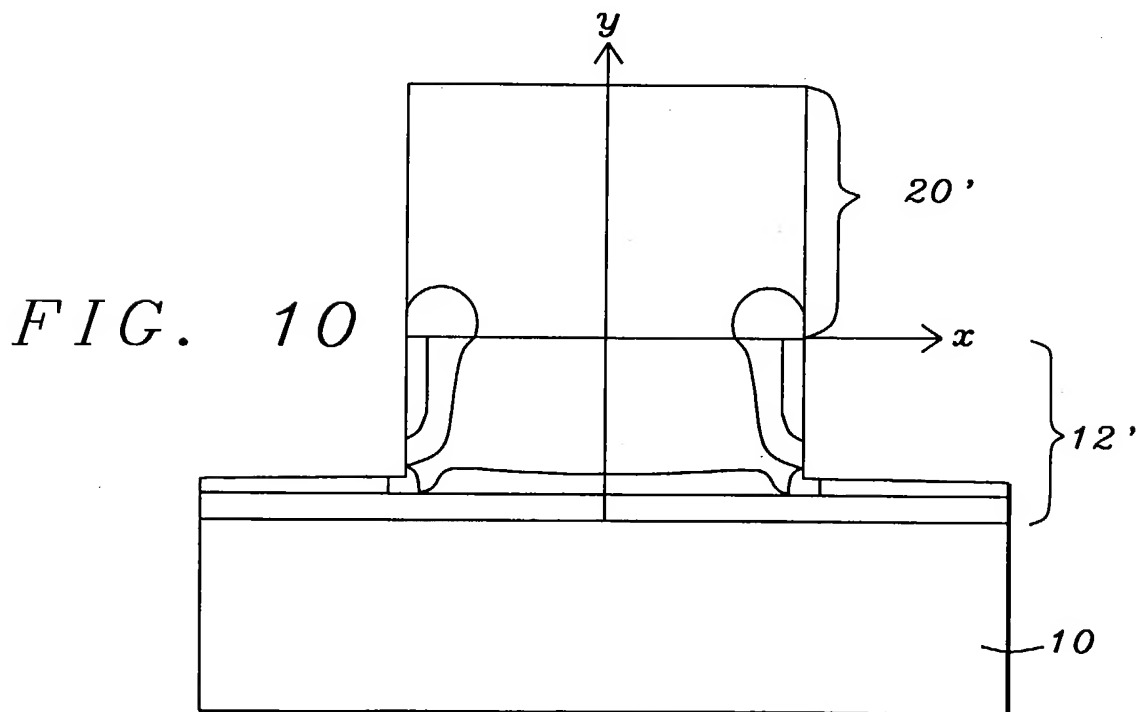Waveguide 20' over-etched into
underclad layer 12

FIG. 7

Overclad 26 around and on top
of waveguide 20'

FIG. 8

FIG. 9

*Stress contours for δ'xx
(negative is compressive and
positive is tensile)*

FIG. 10

*Stress contours for δ'yy
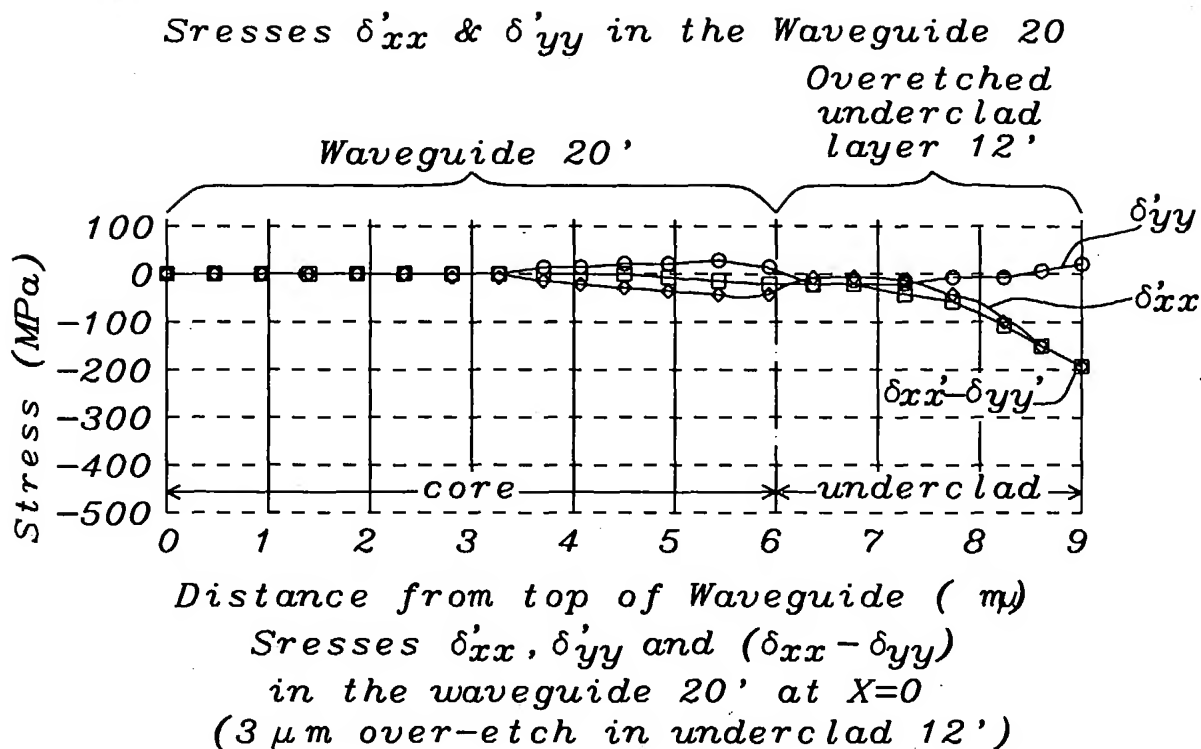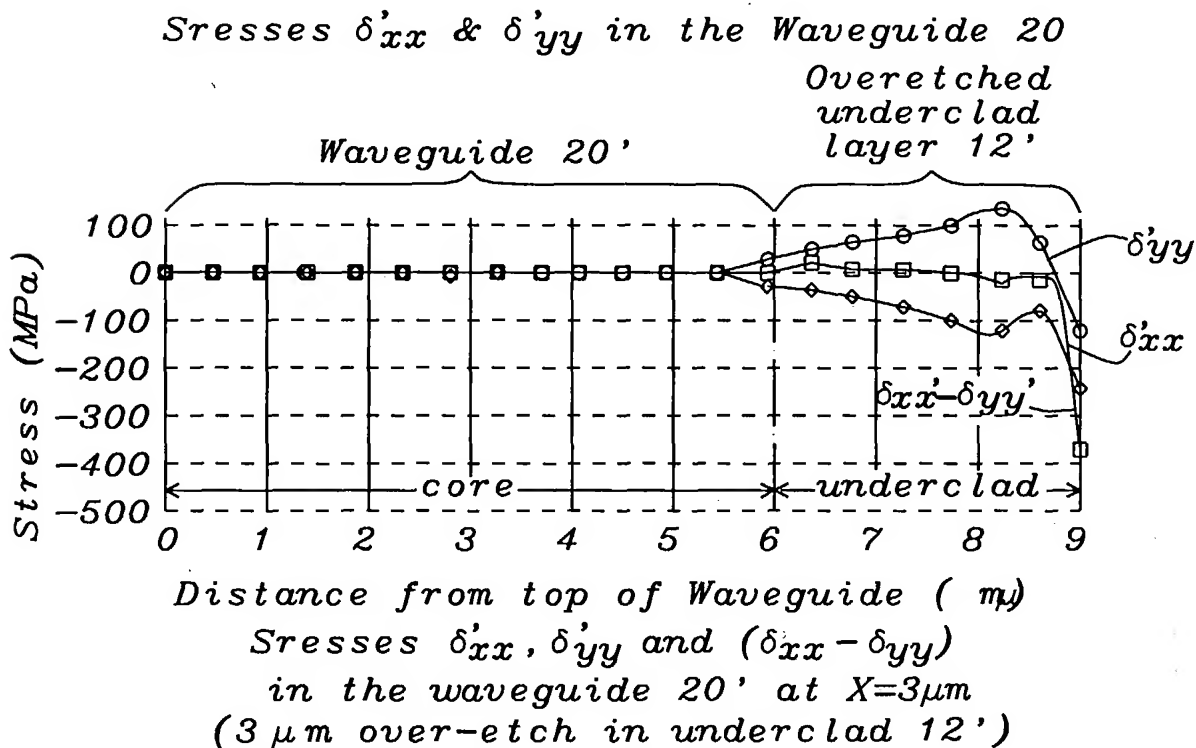(negative is compressive and
positive is tensile)*

Sresses δ'_{xx} & δ'_{yy} in the Waveguide 20

Overetched
underclad
layer 12'

Waveguide 20'

Distance from top of Waveguide ($m\mu$)
Sresses δ'_{xx}, δ'_{yy} and $(\delta_{xx} - \delta_{yy})$
in the waveguide 20' at X=0
(3 μm over-etch in underclad 12')

FIG. 11

Sresses δ'_{xx} & δ'_{yy} in the Waveguide 20

Overetched
underclad
layer 12'

Waveguide 20'

Distance from top of Waveguide ($m\mu$)
Sresses δ'_{xx}, δ'_{yy} and $(\delta_{xx} - \delta_{yy})$
in the waveguide 20' at X=3μm
(3 μm over-etch in underclad 12')

FIG. 12